

A NOTE ON ROAD KILLING OF INDIAN PANGOLIN *Manis crassicaudata* Gray AT KAMBALAKONDA WILDLIFE SANCTUARY OF EASTERN GHAT RANGES

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There are eight extant species of pangolins; among them population of four Asian pangolin species (Botha & Gaudin 2007; Lim & Ng 2008) including Indian Pangolin *Manis crassicaudata* is believed to have declined significantly in many areas due to hunting and trade (Broad et al. 1988). *M. crassicaudata* is widely distributed through the plains and lower slopes of hills south of the Himalaya to the southern extremity of India (Tikader 1983; Prater 2005). However, little is known about the status and activity pattern of the Indian Pangolin throughout its range (Burton & Pearson 1987). Pangolins are nocturnal and are adapted to have a highly specialized diet of ants and termites (Lekagul & McNeely 1988; Heath 1995; Prater 2005; Lim & Ng 2008; Pattnaik 2008). All species of Asian pangolins are rarely observed due to their secretive, solitary, and nocturnal habits, and there is not enough research on population densities or global population (WCMC et al. 1999; CITES 2000).

Threats & Conservation Status

Pangolins are regularly collected in hill forest areas for the scales and as a source of meat (Bangladesh CITES MA in litt. 1986). Hakims (practitioners of traditional medicine) consider various body parts of the pangolins to be a valuable source of medicines (Roberts 1977). Pangolin scales are highly valued for their alleged medicinal value, particularly for treating a wide variety of skin diseases (Harrison & Loh 1965). Considering the vulnerability, the species has been included in the Schedule I



Fig 1: Indian Pangolin *Manis crassicaudata* hit by a vehicle while trying to cross the highway

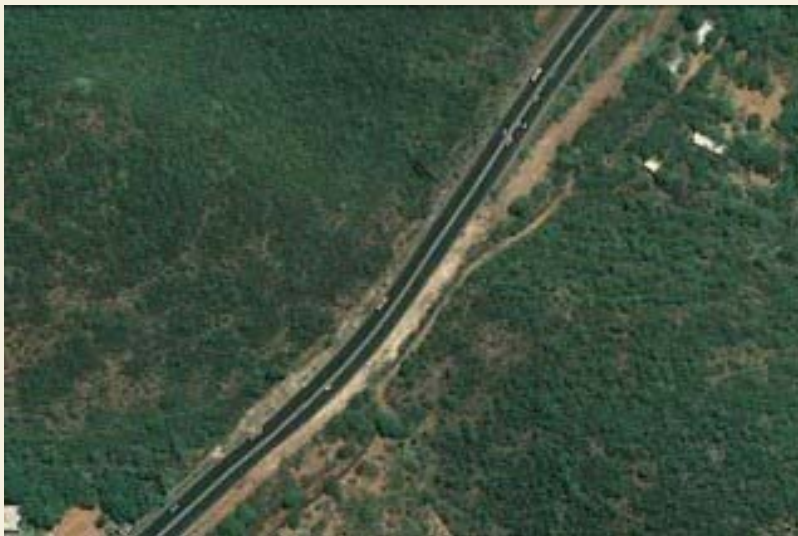


Fig 2: Aerial view of the National Highway – 5 which runs along Kambalakonda Wildlife Sanctuary. (Source – Google Earth 2010)

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of the Indian Wildlife (Protection) Act, 1972, and thereby protected throughout the country (ENVIS 2002; Gaski & Hemley 1991; WCMC et al. 1999). Pangolins (*Manis* spp.) have been listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which bans all international trade. The ban was implemented in 2000 (CITES CoP 11 2000; UNEP/ WCMC 2008). This species is also listed as Near Threatened (NT) in the IUCN Red List of Threatened Species (IUCN 2008)

A Pristine Habitat for Pangolins

Kambalakonda Wildlife Sanctuary (17°47'–17°50'N 83°04'–83°20'E) is ca. 20 km (by road) northeast of Visakhapatnam city, Andhra Pradesh along National Highway 5. It is a cluster of west–east running Eastern Ghats hills covering an area of 75km² along with an unprotected wilderness buffer zone of 80km² on its western side. Its topography is a steep and undulating terrain of rolling hills, thickly vegetated gorges and valleys with an average altitude of 200–300 m (Shekhar et al. 2008). The pristine vast expanses of hill forest, undulating terrain and thick canopy that offers excellent habitat for shy and elusive species like the Indian Pangolin which is shrouded by myth and legend in the local folklore. The hills and boulders provide excellent cover for burrowing species. Termites and ants, which predominantly constitute the diet of the scaly anteater, are found in relative abundance in these forests owing to the rich supply of decomposing biomass. The burrows and scats of this elusive animal can be observed in the well protected valleys deep inside the sanctuary (Shekhar 2004). Large termite mounds dug open by the sharp claws of the anteater can also be seen in the reserve.

Road Ecology – Automobile Toll

Many wild animals including small mammals like the pangolin risk daily encounters with fast-moving vehicles plying on the National Highway 5 which runs along the Kambalakonda Wildlife Sanctuary traversing a discontinuous chain of hills (Figure 2). This highway crossing is turning out to be a death knell for the resident population of pangolins for as many as 3 road kill cases were documented in a span of 3 months during the peak monsoon season from July to September 2010 (Figure 1). The three road kills were recorded on 21.07.2010, 18.08.2010 and 07.09.2010 respectively within a stretch of 10 kilometers. Such incidents, no matter how unobtrusive they may appear, can have a profound effect on the population of a species which has already been grappling with various human induced threats for their survival. Although pangolins have arboreal adaptation, they are strictly nocturnal in nature, foraging actively at night in search of their specialized food of termites and ants. For this reason, they need to scour the ground for termite mounds to feed on which makes them particularly vulnerable to running over by vehicles. Fatal encounters of wildlife with

automobiles are bound to happen when man-made roads and highways crisscross the age old animal paths, migratory routes and feeding trails. Invariably, pangolins are among the worst hit in road kills.

Conclusion and Recommendations

Roads are well known to cause various ecological changes, leading to a wide range of impacts including many, often unnoticed, detrimental effects on wildlife (Spellerberg 1998). Road kill peaks in areas like this highway crossing at Kambalakonda Wildlife Sanctuary where natural habitats are intersected by roads turning them into ecological death traps for native wildlife. Many small mammals and reptiles fall prey regularly to the unruly traffic. Moreover, lack of consideration of ecological aspects while constructing roads is one of the glaring failings of the authorities. No studies on the road ecology have been carried out as yet in the area. In fact, studies on road ecology in India are also scanty.

Temporary solutions to control road killings include proper deployment of speed breakers at strategic locations, creation of underpasses and overpasses which are designed accordingly to address the ecological and behavioral needs of the species. Besides, placing signboards, spreading awareness among public, especially in suburbia and measures to curb over speeding vehicles also helps in mitigating the mortality rate to certain extent. Nevertheless, a more comprehensive scientific approach with a deeper understanding of the species and road ecology of the area can ameliorate the chances of securing the long term survival of these secretive nocturnal mammals in the sanctuary.

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Call for papers and posters

Second Seminar on Small Mammal Conservation Issues, Nepal

Small Mammal Conservation and Research Foundation (SMCRF) announce the second seminar on small mammal conservation issues and call for submission of paper for the seminar to be held on 15 May, 2011. The theme for this year is "Conserve Small Mammal for Sustainable Forest". We request all interested researchers, free lancers, students and biologists to send your research papers for oral and poster presentations on Small Mammal conservation issues for the seminar. Deadline for submission of the abstract for oral and poster presentation is 29 January 2011 and the deadline for submission of full paper is 28 February 2011. Abstract must not be more than 250 words.

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